AYZENSHTEYN, I.

Photographic booth. Nov.torg.tekh. no.3:6-7 '56. (MLRA 9:10)

(Photography--Apparatus and supplies) (Machinery, Automatic)

AYZENSHTEYN, I.

A more serious approach to the publication of literature on progressive methods. Sov. torg. no.4:58-59 Ap '57. (MLRA 10:4)
(Russia--Commerce)

AYZENSHTEYN, I.

When will signs be lighted? Obshchestv. pit. no.4:56-57 Ap '58.
(MIRA 11:4)

(Electric signs)

AYZENSHTEYN, I.

Increase positive experience and remove the defects. Sov.torg. no.1:26-29 Ja '59. (MIRA 12:2)
(Moscow--Retail trade)

AYZENSHTEYN, I.

Mechanization in creameries. Sov. torg. 34 no.10:50-52 O '60. (MIRA 13:10)

(Milk trade)

AYZENSHTEYN, I.

Modern store fixtures. Sov. torg. 34 no.11:48-52 N '60.
(MIRA 13:11)

(Store fixtures)

AYZENSHTEYN, I.

Simpler and easier. Sov. torg. 34 no.9:40-41 S '61. (MIRA 14:9)
(Moscow--Cold storage warehouses--Equipment and supplies)

[illegible], I. (g. Al'met'yevsk)

In the city of oilmen. Sov. torg. 35 no.11:32-35 N '61. (MIRA 14:10)

(Al'met'yevsk—Retail trade)

AYZENSHTEYN, I., inzh.

Activity of volunteer design bureaus. Avt.transp. 40 no.5:10
My '62. (MIRA 15:5)

(Technological innovations)

SRUBASOVSKIY, G.; AYZENSHTEIN, I.

Integrated brigades. Avt.transp. 41 no.2:8-9 F '63.
(MIRA 16:2)
(Transportation, Automotive)

AYZENSHTEYN, Il'ya Markovich; IVANOV, Valentin Filippovich; KIRAKOZOVA,
N.Sh., red.; MAMONTOVA, N.N., tekhn. red.

[Progressive forms of trade in consumers' goods]Progressivnye
formy torgovli promyshlennymi tovarami. Moskva, Gostorgizdat,
1962. 102 p. (MIRA 16:3)
(Retail trade--Equipment and supplies)

STARCHAKOVA, I.I.; LYUDSKOV, B.P.; AYZENSHTEYN, I.M., red.;
USTINOV, M.T., red.; GROMOV, A.S., tekhn.red.

[Innovations in the work of trade enterprises] Novoe v rabote torgovykh predpriiatii; sbornik. Moskva, Gostorgizdat, 1962. 335 p. (MIRA 17:2)

AYZENSHTEYN, I.M.,

MODESTOVA, T.A.; AYZENSHTEYN, I.M.; KOZLOV, A.N., redaktor; KOVYKOV, A.K.,
tekhnicheskiy redaktor

[The textile trade] Torgovlia tekstil'nymi tovarami. Moskva, Gos.
torgovoe izd-vo, 1953. 107 p. [Microfilm] (MLRA 7:10)
(Textile industry)

STARCHAKOVA, Irina Ivanovna; LYUDSKOV, Boris Pavlovich; AYZENSHTEYN, I.M., red.; USTINOV, M.T., red.; BRODSKIY, M.P., tekhn. red.

[New developments in the retail trade during 1960] Novoe v torgovle za 1960 g; sbornik. Leningrad, Gostorgizdat, 1961. 294 p. (MIRA 15:1)

(Retail trade)

AYZENSHTEYN, M. D.; SOLDATOV, K. N.

"Centrifugal Oil Pumps," Neftyanoye kozyaystvo, 1949, No. 9.

No. 444, 16 Aug 55

AYZENSHTEYN, Mikhail Dmitriyevich; L'VOVA, L.A., vedushchiy redaktor;
POLOSINA, A.S., tekhnicheskiy redaktor

[Centrifugal pumps for the petroleum industry] TSentrobezhnye nasosy dlia neftianoi promyshlennosti. Moskva, Gos.nauchno-tekhn.izd-vo neft.i gorno-toplivnoi lit-ry, 1957. 363 p. (MIRA 10:9)
(Centrifugal pumps) (Oil well pumps)

AYZENSHTEYN, M.D.

Standard series of centrifugal pumps for petroleum and petroleum product pipelines. Neft. khoz. 36 no.5:50-54 My '58.

(MIRA 11:6)

(Centrifugal pumps) (Petroleum--Pipelines)

AYZENSHTEYN, M.D.

Standard series of centrifugal pumps for petroleum and petroleum product pipelines. Neft. khoz. 36 no.6:57-60 Je '58. (MIRA 11:9)
(Petroleum--Pipelines) (Pumping machinery)

AYZENSHTEYN, M.D., inzh.

Cetnrifugal pumps of small delivery volume for the petroleum industry. Khim.mash. no.5:7-9 S-O '60. (MIRA 13:9)
(Centrifugal pumps)
(Petroleum industry--Equipment and supplies)

DEMIDOVICH, Ye.A.; AYZENSHTEYN, M.D.

Supply of railroad rails by theoretical weight. Metallurg 8
no.7:27-28 Jl '63. (MIRA 16:8)

1. Yenakiyevskiy metallurgicheskiy zavod.
(Railroads--Rails) (Rolling (Metalwork))

AYZENSHTEYN, M.D.; DEMIDOVICH, Ye.A.; KOBA, A.G.

Fluting inclined sections of roll grooves by disk knurling.
Metallurg 9 no.5:34-35 My '64. (MIRA 17:8)

1. Yenakiyevskiy metallurgicheskiy zavod.

DEMIDOVICH, Ye.A., inzh.; AYZENSHTEYN, M.I., inzh.; STEPNOY, A.V., inzh.

Wear-resistant hard facing of rolling mill rolls under a ceramic flux. Svar.proizv. no.12:21-23 D '64. (MIRA 18:1)

1. Yenakiyevskiy metallurgicheskiy zavod.

TSEYDLER, S.A., kand.med.nauk; AYZENSHTEYN, M.S., kand.mod.nauk

Acute hemolytic anemia in a patient with tonsillitis after dosage with sulfanilamide and biomycin. Kaz.med.zhur. 40 no.1:80-82 Ja-F '59. (MIRA 12:10)

1. Iz kliniki infektsionnykh bolezney (zav. - prof.K.V.Bunin) 1 Moskovskogo ordena Lenina meditsinskogo instituta im. I.M. Sechenova i Moskovskoy klinicheskoy infektsionnoy bol'nitsy No.1 (glavvrach - M.O.Zaleskver).
(TONSILLITIS) (ANEMIA) (SULFANILAMIDE--TOXICOLOGY)
(AUREOMYCIN--TOXICOLOGY)

AYZENSHTEYN, M.S.; LUNTS, R.I.; NOVIKOVA, R.S.; SHAPIRO, V.S.

Combination of adenomatosis and tuberculosis of the lungs. Probl. tub. 38 no.7:43-48 '60. (MIRA 14:1)

1. Iz Moskovskoy klinicheskoy infektsionnoy bol'nitsy No.1 (glavnyy vrach - zasluzhennyy vrach RSFSR N.G. Zaleskver) i Moskovskoy gorodskoy klinicheskoy tsentral'noy tuberkuleznoy bol'nitsy (glavnyy vrach - zasluzhenny deyatel' nauki prof. V.L. Eynis).
(TUBERCULOSIS) (LUNGS--TUMORS)

RADCHIK, O.S. [Radchyk, O.S.], nauchnyy sotrudnik; AYZENSHTEYN, T.V., nauchnyy sotrudnik

Semiautomatic device for grafting grapevines. Mekh.sil'.hosp. 10 no.11:23-24 N '59. (MIRA 13:3)

1. Ukrainskiy nauchno-issledovatel'skiy institut vinogradarstva i vinodeliya im.Tairova.
(Viticulture) (Grafting)

AYZENSHTEYN, T.V.

The MK-1 and IT-1 semiautomatic machines for the sizing and grafting of grape vines. Biul.tekh.-ekon.inform. no.3: 55-56 '60. (MIRA 13:6)
(Viticulture)

AYZENSHTEYN, T.V., inzh.

Automatic machine for pinning sewing needles on paper. Mekh.i avtom.proizv. 16 no.3:43-44 Mr '62. (MIRA 15:4)
(Machinery, Automatic)

AYZENSHTEYN, Ye.O.

Anna Ivanovna Tiapkina. Med. sestra 21 no.3:56 Mr '62. (MIRA 15:3)
(TIAPKINA, ANNA IVANOVNA)

AYZENSHTOK, A.L.

The I702-type hydraulic press for molding porous plastics. Biul. tekh.-ekon. inform. no.1:35-36 '57. (MIRA 11:4)
(Hydraulic presses)

AYZENSHTOK, A.L.

The PO09-type anode hydraulic press with 2200 ton capacity.
Biul.tekh.-ekon.inform. no.2:17-19 '58. (MIRA 11:4)
(Hydraulic presses)

AYZENSHTOK, A.L.

The PM-2 hydraulic stamping press of 2,000 ton capacity. Biul. tekh.-ekon. inform. no.4:17-18 '58. (MIRA 11:6)
(Hydraulic presses)

AYZENSHTOK, I.Ya., kandidat tekhnicheskikh nauk.

Scientific generalization of Stakhanovite practice in conveyer belt transportation. Zap.Inst.gor.mekh. AN URSR no.5:98-133 '47.
(Conveying machinery) (MLRA 8:4)

PA 1/49T15

USSR/Engineering — Jun 48
Metallurgy, Ferrous
Ball Bearings

"Test of Optimum Technology for Smelting Ball Bearing Steel," M. I. Kolosov, I. Ya. Ayzenshtok, N. V. Keys, Engineers, Chelyabinsk Metallurgical Works, 8½ pp

"Stal'" No 6

Series of tests determined that best method consists of terminal oxidation of steel with calcium silicate and introduction of ferrous chromate at beginning of refining process. This

1/49T15

USSR/Engineering (Cont'd) — Jun 48

greatly increased quality, decreased cost and increased productivity of equipment

1/49T15

AYZENSHTOK, N.[illegible]
I. Ya.

AYZENSHTOK, I.Ya., kandidat tekhnicheskikh nauk.

[redacted]

On forces acting on the cutting edge of excavators. Zap.Inst.gor.
mekh. AN URSR no.6:102-114 '48. (MLRA 8:4)
(Excavating machinery)

[illegible], I. Ya; [illegible], M. I.; [illegible], T. V.:

Test of Optimum Technology for Smelting Ball Bearing Steel

Stal', No 6, 1948

Chelyabinsk Metallurgical Plant

Al'genshtok, I. Ya.

CA

7

Search for the best technology in the production of ball-bearing steel. M. I. Kolosov, I. Ya. Algenstok, and N. V. Kels. *Stal* 8, 521-9(1948).—Three methods of deoxidation were studied for their effect on non-metal occlusions and quality of surface of ball-bearing steel. The methods studied were: (1) deoxidation with carbidic slag and addn. of FeSi lumps at the end of the refining period, (2) deoxidation with carbidic slag and then with ground FeSi, and (3) preliminary deoxidation with FeSi and Al, then with carbidic slag, and finally in the ladle with CaSi. Of these, method (3) proved the best; it improved the quality of the steel, lowered its cost of production, somewhat, and raised the output. Four variations of this method were tried: (3*a*) Into an emptied furnace were charged limestone 800, Fe ore 800 kg. and then metal consisting of coarse scrap 60-70%, fine scrap 20, and conversion pig 10-25%. During the melt enough limestone and fluorite was added to slag P and Si and to produce an active slag. After drawing off the oxidizing slag, FeSi was added to the metal in an amt. to provide 0.07-0.10% of Si and Al in an amt. to provide 0.5 kg./ton. Then the refining slag was caused to form and after 15 min. of this refining period were added FeCr and FeMn, and then carbidic slag was formed by adding ground coke and more limestone and fluorite. The deoxidation under this slag was continued for 40-60 min. Twenty min. before tapping the metal, more FeSi was added, calcd. to add 0.03-0.05% of Si. The heat was tapped without slag, adding CaSi calcd. to make 3 kg./ton. The CaSi was in 10-50 mm. lumps and contained Ca 27-29, Si 55-62, and Al 3%. (3*b*) differed from the foregoing by not having ore in the original charge; it was added later in the run. After drawing off the oxidizing slag 0.07% Si and 0.5 kg./ton Al and FeCr were added. The refining slag after becoming fluid was converted to an oxidizing slag by addn. of ground coke. In the 2nd half of the refining period was added charcoal and coarsely ground coke. In (3*c*) in addnl. 0.25 kg./ton of metal was added 1 hr. before tapping. (3*d*) was like (3*b*) except that no Al was used. Of these variations (3*b*) was the preferred and was adopted for production.

M. Hoech

AYZENSHTOK, I. Ya.

AYZENSHTOK, I. YA.

"The Physical Theory of Cutting Ground," Gor. Zhur., No. 5, 1949. Cand. Tech. Sci, Inst. Mining Mechanics imeni M. M. Fedorov, Acad. Sci. Ukrain SSR, -c1949-.

AYZENSHTOK, I. Ya.

Ayzenshtok, I. Ya. - "The physical theory of earth cutting," Gornyy Zhurnal, 1949, No 6, p/ 24-26, - Bibliog: p. 26, - (Continuation, Beginning: No 5)

SO: U-5240, 17, Dec. 53, (Letopis 'Zhurnal 'nykh Statey, No. 25, 1949).

AIZENSHTOK, I. Ia

Author: Aizenshtok, I. Ia.

Title: The basic questions pertaining to the mechanics of metal cutting processes. (Osnovnye voprosy mekhaniki protsessa rezaniia metallov.) 81 p.

City: Kiev.

Publisher: State Printing House of Scientific and Technical Machine Con. Lit.

Date: 1950

Available: Library of Congress

Source: Monthly List of Russian Accessions, Vol. 3, No. 8, Page 527

1. AYZENSHTOK, I. Ya.

2. USSR (600)

4. Gogol', Nikolai Vasil'evich, 1809-1852.

7. N. V. Gogol' and Petersburg University. Vest. Len. un., 7, no. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

AYZENSHTOK, I. Ya.

3

Influence of the Composition of Bearing Steels on the Carbide Network. N. K. Ipatov, I. Ya. Aizenshtok, and L. D. Korsovskii. (Stal', 1956, (8), 739-742). (In Russian). The aim of the work described was to find the effect of various elements on the quantity of carbides formed in bearing steels and on the ease with which the carbide network can be made finer or removed after annealing. The statistical analysis method was applied to the results of chemical analyses and network size determinations on numerous heats of a single type of bearing steel. Some heats of the steel with an elevated manganese content were also included, and, in addition, the influence of position in the ingot was studied.—S. K.

AYZENSHTOK, I-Ya.

Improving quality of ball-bearing steels. M. I. Kolotov, I. Ya. Aizenshtok, N. V. Kets, and D. B. Novak (Met. Plant, Chelyabinsk). Stal' 15, 431-8 (1955).—Extensive statistical studies of deoxidation practice of arc furnace heats indicated that, independently of the practice used, melting without oxidation leads to less oxidic inclusions, and straight remelting improves the sulfide content. Among several deoxidation methods described, best results were obtained with a carbide slag and powdered FeSi. FeCr should be added directly after skimming off the black slag. All ingots in the plant are bottom poured. A study of 900 production heats showed a max. oxide content near the bottom and of sulfides close to the top of ingots. Refilling of hot tops caused addnl. contamination. J. D. Gat

HG

AYZENSHTOK, I.Ya., KOLOSOV, M.I., MOROZOV, A.M., STROGANOV, A.I., KEYIS, N.V.,
VAYNSHTEYN, O.Ya.,

d

"Influence of Blast Humidity on the Cast-Iron Hydrogen Content and the Quality of Steel,"
lecture given at the Fourth Conference on Steelmaking, A.A. Baikov Institute of Metallurgy, Moscow, July 1-6, 1957

AIZENSHTOK, I. Ya.

133-1-18/24

AUTHORS: Kolosov, M.I., Ayzenshtok, I.Ya., and Komissarov, A.I., Engineers.

TITLE: Rational Conditions of Annealing Quality Rolled Products in Batch Furnaces with Mechanical Charging of Piles (Ratsional'nye rezhimy otzhiga sortovogo prokata v kamernykh pechakh s mekhanizirovannoy posadkoy paketov)

PERIODICAL: Stal', 1958, No.1, pp. 71 - 74 (USSR).

ABSTRACT: In 1946, two new batch furnaces for annealing structural rolled steel, designed by Gipromez, were erected. Characteristic feature of these furnaces (Fig.1): under bottom firing with additional ports for recirculation of the combustion products; mechanised charging of piles. The initial operation of these furnaces was found to be unsatisfactory and in order to establish a correct annealing practice, a number of investigations of the heating of metal were carried out. On the basis of the results obtained, correct annealing practice was developed. This results in a 100% increase in the amount of annealed metal (from 1946-1956), in addition fuel and power consumption decreased by 30 and 15%, respectively, and the cost of annealing a ton of metal decreased from 700 to 75 roubles. It is stated that the annealing furnaces on the Chelyabinsk

Card 1/2

133-1-18/24

Rational Conditions of Annealing Quality Rolled Products in Batch Furnaces with Mechanical Charging of Piles

Works as well as similar furnaces on the Dneprospetsstal' Works are superior to furnaces on other works with sliding bottoms. The following participated in the investigation: V.N. Shvetsov, N.K. Ipatov, A.A. Khuden'kikh, G.Ye. Mysina, R.P. Syromolotova, M.Ye. Anisimova, Z.A. Tavakina, A.A. Tsvetkova, Z.A. Monastyrskaya. There are 2 figures and 2 tables.

ASSOCIATION: Chelyabinsk Metallurgical Works (Chelyabinskiy metallurgicheskiy zavod)

AVAILABLE: Library of Congress

Card 2/2

133-58-5-9/31

AUTHORS: Kolosov, M. I., Ayzenshtok, I. Ya., Komissarov, A. I., Mysina, G. Ye. ~~and Po~~volotskaya, ~~M. S.~~

TITLE: The Influence of the Weight of Ingots on the Quality of Structural Steels (Vliyaniye vesa slitka na kachestvo konstruktsionnykh staley)

PERIODICAL: Stal', 1958, Nr 5, pp 411-414 (USSR)

ABSTRACT: An investigation of the possibility of increasing the weight of ingots of steels 18KhVA, 40KhNMA, 12Kh2N4A and 30KhGSA from 1.2 and 2.65 t to 4.5 t was carried out. This increase in weight of ingots was necessary in order to increase the throughput of the casting pit and blooming mill as well as to increase the degree of deformation on rolling profiles of a large cross-section (250 to 300 mm). The investigation was carried out on eight heats made in a 30-ton electric furnace. The experimental metal was teemed into 1.18, 2.65 and 4.5 t ingots. In order to study the character of crystallisation three ingots of various sizes from each melt of each of the steels investigated were selected. After slow cooling and a softening heat treatment from the twelve selected ingots axial longitudinal plates were cut. The experimental ingots of 2.65 and 4.56 (charged hot into soaking pits)

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133-58-5-9/31

The Influence of the Weight of Ingots on the Quality of Structural Steels

were rolled on a blooming mill to a cross-section 250 x 250 mm and then on a mill 800 into semis 140 x 140 mm. Ingots weighing 1.18 t were rolled on a mill 800 into semis 140 x 140 mm. For the studies of the macrostructure and mechanical properties specimens were taken from semis 250 x 250 on the following distances from the top of ingots %:

Ingot 2.65 t	19, 58, 98
Ingot 4.5 t	19, 39, 58, 78, 98

The macrostructure of etched specimens was evaluated according to MAP-MChM scale. Thermal treatment of specimens for testing mechanical properties was done according to MPTU2333-49. The macrostructure of ingots is shown in Figs. 1-4. The results obtained indicated that: 1. Macrostructural defects in rolled steels were caused by defects in the cast structure of ingots. 2. Axial intercrystallite cracks in rolled steel 18KhNVA of a cross-section 250 x 250 from 4.5 t ingots remain unwelded during rolling in spite of a considerable degree of reduction (in steel 12Kh2N4A they are welded

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133-58-5-9/31

The Influence of the Weight of Ingots on the Quality of Structural Steels

on both profiles 140 x 140 mm and 250 x 250 mm (from ingots of all weights). 3. The axial porosity and v-shaped cracks in ingots of steels 40KhNMA and 30KhGSA are welded during rolling. 4. The degree of development of segregation outside the central zone of ingots depends on the chemical composition of steel and increases with increasing weight of ingots, but does not exceed the degree permitted by MAP-MChM 1951. From the steels investigated the highest development of the segregation was observed in ingots of steel 30KhGSA. 5. The weight of ingot has no influence on the mechanical properties of steels. 6. The indices of mechanical properties of steels investigated were high with the exception of the top part of 4.5 ton ingot of steel 30KhGSA, where strength and plasticity indices were lower than is required by standards. It is concluded that: 1. Increasing the weight of ingots of 18KhNVA steel from 1.18 to 2.65 ton to 4.5 t is not advantageous, as this deteriorates the macrostructure of metal due to developing axial intercrystallite cracks which are not welded during rolling. 2. Steels 12Kh2N4A

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133-58-5-9/31

The Influence of the Weight of Ingots on the Quality of Structural Steels

and 40KhNMA can be cast into 4.5 ton ingots as their structure and mechanical properties remain satisfactory.
3. The problem of casting steel 30KhGSA into 4.5 t ingots requires further investigation.
There are 4 figures.

ASSOCIATION: Chelyabinskiy metallurgicheskiy zavod
(Chelyabinsk Metallurgical Works)

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SOV/133-59-9-13/31

AUTHORS: Keys, N.V., Ayzenshtok, I.Ya., Komissarov, A.I. and Royak, D.B., engineers

TITLE: The Production of Steel 38KhMYuA for Internal Combustion Engines

PERIODICAL: Stal', 1959, Nr 9, pp 808-811 (USSR)

ABSTRACT: Changes in the technology of smelting 38KhMYuA steel since the start of its production in 1952, are outlined. The main points in the smelting technology used at present: a) a preliminary deoxidation of the bath with pig iron after the end of the oxidising period; at the beginning of refining, the bath is deoxidised with a mixture of silicomanganese and 75% ferrosilicon in lumps; b) addition of ferrochromium at the beginning of refining; c) diffusion deoxidation with coke and ferrosilicon during 20 minutes; d) shortening of the reducing period to 80 minutes (instead of 120 to 150 minutes in the previous technology) metal temperature before casting 1600 to 1620°C in the ladle 1575 to 1590°C. Despite improvements in the smelting technology, the proportion of defective metal is still high (in 1957 - 145%). Due to the appearance of spot segregation, head crops were

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SOV/133-59-9-13/31

The Production of Steel 38KhMYuA for Internal Combustion Engines

increased to 25%. Most common defects encountered in this type of steel are described: 1) Spot segregation consisting of localised enrichment of metal in carbon, sulphur and phosphorus; the appearance of the defect is associated with the evolution of gas during crystallization. 2) "Bubbles" - in the axial zone of macrotemplets discontinuities in the metal called "coarse bubbles" (Fig 1). A fracture along the zone of the "bubbles" appears as lamination in the form of dark thread. No changes in structure in the zone of the defect was noticed, non-metallic inclusions are absent. Studies of longitudinal cross sections of ingots (Fig 2) indicated that the defect is associated with insufficient feeding of the ingot during its solidification. 3) Cracks - usually situated in the central part of macrotemplets (Fig 3). The defect was found to be caused by too early transportation of ingot bogies after teeming (40 minutes) by retaining the bogies in the casting pit for 2 hours 20 minutes this type of defect disappeared. An investigation of the defects in the finished parts - blisters (Fig 5, 6 and 7) indicated that some improvements

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SOV/133-59-9-13/31

The Production of Steel 38KhMYuA for Internal Combustion Engines

in the forging of semis and stamping of parts are necessary as at present, the central part of the ingot is pushed towards the internal working surface of the stamped parts. The necessity of establishing well founded standards for defects which at present are considered as unavoidable is stressed. There are 7 figures and 6 Soviet references.

ASSOCIATION: Chelyabinskiy metallurgicheskiy zavod
(Chelyabinsk Metallurgical Works)

Card 3/3

AYZENSHTOK, I. Ya.

PHASE I BOOK EXPLOITATION SOV/4206

Kolosov, Mikhail Ivanovich, Anatoliy Il'ich Stroganov, and Isay Yakovlevich Ayzenshtok

Proizvodstvo sharikopodshipnikovoy stali (Production of Ball-Bearing Steel) Moscow, Metallurgizdat, 1960. 267 p. Errata slip inserted. 2,650 copies printed.

Ed.: A.I. Lebedev; Ed. of Publishing House: Ya. D. Rozentsveyg; Tech. Ed.: M.K. Attopovich.

PURPOSE: This book is intended for production engineers and scientific workers in metallurgy and machinery manufacture. It may also be used by students in advanced courses at schools of higher education specializing in metallurgy and machinery manufacture.

COVERAGE: The book deals with production techniques, basic quality requirements, and in-service conditions for ball-bearing steel. Melting, teeming, rolling, and heat treatment are discussed in detail, and an historical outline of the development of the manufacturing process for ball-bearing steel is presented.

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Production of Ball-Bearing Steel SOV/4206

Sources of impurities in steel (nonmetallic inclusions), methods of determining the presence of impurities, factors leading to the formation of defects, and methods of combatting defects are also investigated. Material used in the book is based on practices of the Chelyabinsk, Stalingrad, and Zlatoust Plants and the Serov and Kuznets Metallurgical Combines. The authors thank the following persons for their assistance: Engineers N.V. Keys, A.M. Khizhnichenko, D.B. Royak, T.M. Malinovskaya, L.D. Kossovskiy, N.Ye. Mysina, N.K. Ipatov, N.S. Devchenko, D.G. Zhukov, V.F. Isupov, and Doctor of Technical Sciences I.N. Golikov. There are 191 references: 174 Soviet, 13 English, and 4 German.

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Structure of the steel 13

Ch. II. Structure of the Steel Ingot 15
Crystallization and structure of the steel ingot 15

Card 2/6

AYZENSHTOK, V. L.

PHASE I BOOK EXPLOITATION SOV/5289

Akademiya nauk SSSR. Tsentral'naya nauchno-issledovatel'skaya laboratoriya elektricheskoy obrabotki materialov.

Elektroiskrovaya obrabotka metallov (Electric-Spark Machining of Metals) no. 2. Moscow, Izd-vo AN SSSR, 1960. 262 p. Errata slip inserted. (Series: Its: Trudy) 6,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR.

Resp. Ed.: B. R. Lazarenko; Ed. of Publishing House: S. M. Moyzhes; Tech. Ed.: A. P. Guseva.

PURPOSE: This collection of articles is intended f [illegible] ass engineers, and technical and research personnel eng [illegible] the working of metals.

COVERAGE: Problems concerning the most effective application of electric-spark methods in industry are reviewed. Possible future developments in the field of electric-spark machining and its automation are discussed, and, for instances of its present utilization in industry, the technical-economic effectiveness of the process is examined, and the equipment involved is described. The relationship between the parameters of electric-spark pulses and the production characteristics (productivity, machining accuracy, and surface quality) of electric-spark machining is established. An electric-spark method is advanced for the curvilinear cutting of materials with a 20 to 30 micron-thick wire, thus directly producing a finished part. Non-Soviet developments in the field of electric-spark machining are also treated. No personalities are mentioned. There are 121 references: 82 Soviet, 20 English, 10 French, 8 German, and 1 Italian. These references accompany individual articles.

Zolotykh, B. N., and I. P. Korobova. Selecting Optimum Regimes for Electric-Spark Machining of Sintered-Carbide Alloys 114

Chetverikov, S. S., and N. K. Foteyev. Electric-Spark Machining of the Cutting Elements of High-Carbon-Alloy Blanking Punch-Die Sets 120

Gularyan, K. K. The Electric-Spark Method Applied to Threading 142

Kholodnov, Ye. V. Manufacture of Precision Tools by the Electric-Spark Method 156

Gularyan, K. K., and V. L. Kravchenko. Manufacture of Complex-Shaped Machine Parts by Using a Program-Controlled Electric-Spark Machining Unit 179

Aleksandrov, V. P., and B. N. Zolotykh. Selecting the Optimum Procedures for Electric-Spark Machining of Nickel-Base Heat-Resistant Alloys 196

Gorbunov, B. M. Electric-Spark Lapping Used on Flour-Mill Rolls 205

Pron'ko, O. P. Manufacture of Stainless and High-Manganese Steel Parts by the Electric-Spark Method 217

Ayzenshtok, V. L., and S. I. Komanar. Electric-Spark Marking of Mass-Produced Parts 227

Levinson, Ye. M. The Development of Electric-Spark Machining in Mass Production 233

Card 4/5

S/117/60/000/004/002/002
A004/A001

AUTHORS: Ayzenshtok, V. L., Kominar, S. I., Engineers

TITLE: The Automation of Electric-Erosion Branding Processes

PERIODICAL: Mashinostroitel', 1960, No. 4, pp. 16-19

TEXT: Since the traditional process of branding non-hardened items of mass production with special branding stamps is rather labor-consuming and hardened components cannot be branded with these stamps at all, the Gor'kovskiy avtozavod (Gor'kiy Automobile Factory) has introduced electric-erosion branding. This process made it possible to simplify the manufacture of tools, improve the quality of brands and lower labor consumption. The electrode tool for the application of the brand (letters or figures) by the electric-erosion method consists of a shank and a working piece. The electrode tools are clamped in special magazines and holders. The authors give a description of the design of the tool. The current voltage used is in the range of 55-70 v. The operation conditions for the branding of ground surfaces are cited in a table. Another table states data on the consumption of electrodes. The plant has developed several types of electric erosion installations, particularly the

Card 1/2

S/117/60/000/004/002/002
A004/A001

The Automation of Electric-Erosion Branding Processes

semi-automatic 18-Э-70 (18-E-70) installation. The authors describe the installation and point out that two operation cycles are possible: an automatic cycle and a manual one. A detailed description of the two operation cycles is given. The 18-E-70 electric-erosion installation brands 250 - 300 Cardan cross-pieces for the ГАЗ-51 (GAZ-51) truck per hour. There are 5 figures and 3 tables.

Card 2/2

AYZENSHTOK, Ye.N.

NIKONOVA, T.N., kandidat meditsinskikh nauk; AYZENSHTOK, Ye.N.; AL'TSHULLER, Ts.I.

Course of epidemic hepatitis in children. Pediatriia no.4:62-65 Jl-Ag '55. (MLRA 8:12)

1. Iz kazakhskogo nauchno-issledovatel'skogo instituta okhrany materinstva i detstva (dir.-kandidat meditsinskikh nauk Kh.Ye. Murzaliyeva.

(HEPATITIS, INFECTIOUS, in infant and child)

ACCESSION NR: AP4010076 S/0129/64/000/001/0050/0051

AUTHOR: Ayzentson, G. Ye.; Malinen, P. A.

Title: Decomposition of residual austenite in steel under the effect of ultrasonic oscillations

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 1, 1964, 50-51

TOPIC TAGS: ultrasonic oscillations, resilience, steel resilience, diffusion annealing, magnetostriction, magnetostriction vibrator, microstructure analysis, hardness analysis, ultrasonic treatment

ABSTRACT: This investigation was prompted by the lack of published information on the change in mechanical properties of steel under the effect of ultrasonic oscillations. Steel samples were immersed into baths, heated to 200 and 250 C., subjected to ultrasonic treatment for various periods of time, and then dried in air by disconnecting the ultrasonic oscillator. Thus treated, the samples were cut in half and their cross sections subjected to microstructural and hard-

Card 1/2

ACCESSION NR: AP4010076

ness analysis. A comparison of samples sound-treated at 20 and 12-micron amplitudes for 15, 20, 30 and 60 minutes with untreated control samples revealed that ultrasonic oscillation pulverizes the microstructural steel components and reduces the quantity of residual austenite. The experimental data obtained in this investigation shows that ultrasonic oscillations with amplitudes of 20-12 microns facilitate the decomposition of austenite at a temperature under which its natural decomposition is relatively intensive (250 C.), but do not contribute to its decomposition at its higher stability temperature. Orig. art. has: 1 figure.

ASSOCIATION: Permskiy Gosudarstvennyy Universitet (Perm' State University)

SUBMITTED: 00 DATE ACQ: 07Feb64 ENCL: 00

SUB CODE: ML, CH NO REF SOV: 003 OTHER: 000

Card 2/2

AYZENTSON, Ye. G.

Dissertation: "Roentgenographic Investigation of the Fine Structure of Phase of Patened Wire." Cand Phys-Math Sci, Inst of Physics, Acad Sci Ukrainian SSR, Kiev, 1954. (Referativnyy Zhurnal-Khimiya, Moscow, No 11, Jun 54)

SO: SUM 318, 23 Dec 1954

AYZENTSON, Ye. G.

Solubility of carbon in α-iron. M. P. Arbuzov and E. G. Aizenshtein. *Dopovidi Akad. Nauk Ukr. R.S.R.* 1955, No. 2, 159 (Russian summary).—Steel plates, 10 mm. diam. and 5 mm. thick, contg. 0.013–0.09% C were heated at the eutectoid temp., in a salt bath, for 10 hrs. and quickly cooled to room temp. The plates were then annealed for [illegible] hrs. at different temps. up to 710° and quenched in a 10% NaOH soln. at about 0°. About 0.3 mm. of the surface was removed electrolytically (cf. C.A. 45, 10[illegible]) and the dried powders were used for Debye x-ray patterns. The ranges of soly. of C in α-Fe were thus detd. to be: at 700° not more than 0.054 and not less than 0.0[illegible]%; not more than 0.038% at 650° and not less at 600°; not more than 0.02[illegible] at [illegible] and not less at 640°; not more than 0.0[illegible] at 580° and not less at [illegible]°. J. [illegible]

S/137/62/000/003/126/191
A052/A101

AUTHOR: Ayzentson, Ye. G.

TITLE: On the fine structure of alpha-phase of patented wire

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 35, abstract 3I218 ("Uch. zap. Permsk. un-t," 19, no. 3, 1961, 37-44)

TEXT: An X-ray investigation of the fine structure of α-phase of patented and cold-drawn patended wire (composition: 0.78% C, 0.3% Mn, 0.22% Si, 0.016% P, 0.1% Ni, 0.012% S and Cr traces) has shown, that as a result of patenting the wire obtains a structure the mean size of the coherent blocks of which is characterized by the value of $12.6 \cdot 10^{-6}$ cm. Low stresses ($\Delta \alpha / \Delta = 0.25 \cdot 10^{-3}$) are localized in these blocks. A supposition is expressed that the said stresses are caused by the austenite-sorbite phase conversion taking place in the isothermal bath. In the process of cold drawing patented wire at comparatively small reductions, the mean size of the blocks somewhat decreases. The value of $\Delta \alpha / \Delta$ characterizing the II kind stresses increases sharply in the first stages of the reduction (up to 20 - 25%); as the reduction increases up to 60 - 65% no increase of the II kind stresses is observed; when the reduction

Card 1/2

increases to 85% - a state conditioning high strength properties of the wire - the II kind stresses in it increase sharply again. There is a noticeable difference between the fine structure in the surface layer and inside the wire.

T. Rumyantseva

[Abstracter's note: Complete translation]

S/137/62/000/002/063/144
A005/A101

AUTHOR: Ayzentson, Ye. G.

TITLE: On the fine structure of the carbide phase of patented wire

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 2, 1962, 12, abstract 2I78 ("Uch. zap. Permsk. un-t", 1961, v. 19, no. 3, 45 - 49)

TEXT: The author investigated the fine structure of the carbide phase of patented wire drawn after patenting and containing in %: C 0.78; Mn 0.3; Si 0.22; P 0.016; Ni 0.1; S 0.012; Cr - traces. Small coherent areas of carbide grains of sharply marked plate-shape, are formed during patenting. During drawing the dimensions of the coherent carbide phase domains decrease. It is supposed that the crushing of carbide domains increases the total surface of the carbide phase in the wire and promotes a greater resistance to the slip of ferrite crystals over the cleavage planes, and the accumulation of stresses of II and III order in ferrite crystal formations.

T. Rumyantseva

[Abstracter's note: Complete translation]

Card 1/1

36807

S/137/62/000/004/092/201
A052/A101

18.7500

AUTHOR: Ayzentson, Ye. G.

TITLE: On the fine structure of carbide phase, forming at the isothermic austenite decomposition

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 16, abstract 4I98 ("Uch. zap. Permsk. un-t", 19, no. 3, 1961, 51-57)

TEXT: The dependence of the dimensions and form of coherent carbide regions (blocks) on the temperature and duration of the isothermic austenite decomposition in У-10А (U10A) steel was investigated. The samples were kept 10 minutes at 1,000°C, were transferred rapidly into saltpeter baths with 200 - 600°C, were kept there 2 hours and cooled in water; other samples after a 10 minutes' exposure at 1,000°C were placed in a bath with 500°C and kept in it from 1 to 30 min. By the radiograms taken of the carbide powder it has been established that with a decrease of the temperature of isothermic austenite decomposition, the dispersion of blocks of the forming carbide increases. The blocks have the form of laminas flattened along the [001] direction, whereby the laminar character of blocks is the more pronounced the lower the temperature of isothermic

Card 1/2

austenite decomposition. At the isothermic austenite decomposition in a bath with 500°C the blocks grow during the first 10 - 20 minutes and then the rate of their growth decreases sharply approaching zero. Such behavior of blocks in the process of isothermic austenite decomposition is explained by the limiting effect of C diffusion on their growth. It is possible that the kinetics of growth of carbide blocks can be affected by differently oriented stresses in the matrix phase, which starting from a certain moment in the process of carbide formation on, determine the mosaic structure of the carbide particle.

L. Vul'f

[Abstracter's note: Complete translation]

EWP(r)/EWP(q)/EWT(m)/BDS--AFFTC/ASD/APGC--JD
L 10791-63
ACCESSION NR: AP3000913

S/0279/63/000/002/0124/0129 56

AUTHOR: Ayzentson, Ye. G. (Perm'); Spivak, L. V. (Perm')

TITLE: Effect of ultrasonic vibrations on the isothermal decomposition of KhVG austenitic steel

SOURCE: AN SSSR. Izv. otd. tekh. nauk. Metallurgiya i gornoye delo, no. 2, 1963, 124-129

TOPIC TAGS: austenite decomposition, tool steel, ultrasound effect, residual austenite, hardness

ABSTRACT: Specimens (30-mm long, 9 mm in diameter) of KhVG tool steel (0.95% C, 1.1% Mn, 0.24% Si, 1.22% Cr, and 1.58% W), annealed in a salt bath at 1000 or 900C for 20 min, were transferred to other baths with temperatures of 250 or 450C, held for 2 min, and then subjected to ultrasonic vibrations with a frequency of 20.5 kc at amplitudes of 3, 10, or 18μ applied directly to specimens for 10 to 120 min. In specimens annealed at 1000C, ultrasound at an amplitude of 3, 10, or 18 μ, applied for 10, 30, 60, or 90 min at 250C, was found to refine martensitic

Card 1/~~3~~ 2

L 10791-63
ACCESSION NR: AP3000913

0

structure. The amount of residual austenite and hardness (R_c = 62—63) were not affected. Ultrasound at 10 and 18 μ amplitude, applied at 250C for 60 or 120 min, accelerated the decomposition of austenite in specimens annealed at 900C, while ultrasound at 3μ amplitude applied under the same conditions delayed the decomposition. In the same specimens, only ultrasound at an amplitude of 18 μ applied for 60 and 120 min increased the hardness by 2—3 and 5—6 R_c. Ultrasound applied for 15 or 30 min at 450C to specimens annealed at 1000C did not affect the decomposition of austenite. Longer (60, 90, or 120 min) treatment with ultrasound at an amplitude of 10 or 18μ delayed decomposition and increased hardness by 6 to 7 R_c. Decomposition of austenite in specimens heated to 900C and treated with ultrasound at 450C generally followed a pattern similar to that observed in the previous case, except that decomposition started after treatment for 15 min and hardness increased by only 2—3 R_c. Ultrasound at a 3μ amplitude accelerated the decomposition. Thus, in isothermal decomposition of austenite, ultrasonic vibrations at an amplitude of 10 or 18μ increase the stability of austenite at 450C, but lower it at 250C, while amplitudes of 3μ have the opposite effect. Orig. art. has: 5 figures.

Card 2/2

AYZENTSON, Ye.G.; MALINEN, P.A.; SPIVAK, L.V.; [illegible], I.K.

Effect of ultrasonic waves on the formation of carbide grains during the quenching of hardened carbon steel. Fiz. met. i metalloved. 17 no.4:624-627 Ap '64. (MIRA 17:8)

1. Yestestvenno-nauchnyy institut pri Permskom gosudarstvennom universitete imeni A.M. Gor'kogo.

L 32026-65 EWT(m)/T/EWP(t)/EWP(b)/EWA(c) JD
ACCESSION NR: AP5008797

S/0126/65/019/003/0470/0472

18
17
B

AUTHOR: Ayzentson, Ye. [illegible].; Uvarov, A. I.

TITLE: Investigation of electrolytically isolated austenite

SOURCE: Fizika metallov i metallovedeniye, v. 19, no. 3, 1965, 470-472

TOPIC TAGS: austenite, electrolytically isolated austenite, austenite property, austenite hydrogen content, austenite stability

ABSTRACT: An attempt has been made to determine the cause of the anomalous properties in electrolytically isolated austenite. Specimens of carbon and alloy steels containing 0.44—1.19% carbon were quenched, some were then tempered, and all were then subjected to anodic dissolution in a 1N potassium-chloride solution containing 5% citric acid. Isolated austenite was found to contain 1.3—1.4% C, i.e., much more than in the specimens, which is explained by the diffusion into austenite of part of the carbon released from dissolved martensite. Martensite solubility depends upon the content of carbon and other elements. It dissolves only if the carbon content is less than 0.68%. The isolated austenite contains 4.5—5% hydrogen, which apparently is the reason isolated austenite does not decompose even at 500C. Orig. art. has: 1 table. [ND]

Card 1/2

L 37026-65
ACCESSION NR: AP5008797

ASSOCIATION: Yestestvenno-nauchnyy institut pri Permskom gosuniversitete im. A. M. Gor'kogo (Institute of Natural Sciences, Perm State University)

SUBMITTED: 17Mar64 ENCL: 00 SUB CODE: MM, GC

NO REF SOV: 009 OTHER: 001 ATD PRESS: 3223

Card 2/2

L 27261-65 EWT(m)/EWA(d)/T/EWP(t)/EWT(b)/EWP(l)/EWA(h) Peb MJW/JD

ACCESSION NR: AP4031064 S/0126/64/017/004/0624/0627

AUTHORS: Ayzentson, Ye. G.; Malinov, P. A.; Spivak, L. V.; Ugrobina, I. K.

TITLE: Effect of ultrasonic oscillations on carbide grain formation during annealing of quenched carbon steel 16 16 25 19

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 4, 1964, 624-627 B

TOPIC TAGS: annealing, quenching, ultrasonic vibration, carbon steel/ U12 steel 16 16

ABSTRACT: The effect of ultrasonic oscillations on carbide formation was investigated in U12 steels during annealing at 680C. The 10-mm diameter steel specimens were quenched from 960C temperature in oil and screwed on the waveguide of a magnetostrictive vibrator. At 20.5-kc frequency standing waves of 10μ amplitude were created in the specimen. After the test, longitudinal sections were sliced off from the specimen and the microstructure was analyzed at 2000 magnification. After 1 hour of annealing and ultrasonic oscillations, the microstructures indicated, on the average, larger carbide particle sizes with greater distances between each carbide particle than in the control specimens. A graphical plot of the number of carbide particles versus annealing time shows that the effect of

Card 1/2

L 27261-65

ACCESSION NR: AP4034064

ultrasonic oscillations first increases, reaches a maximum, and subsequently decreases. For a given test duration time, the particle distribution falls sharply from the end of the specimen until it reaches a constant value at a distance of 40 mm. These results show that ultrasonic oscillations promote coagulation of carbides in U12 steels. Orig. art. has: [illegible] figures.

ASSOCIATION: Yestestvenno-nauchnyy institut pri Permskom gosuniversitete im. A. M. Gor'kogo (Natural Science Institute, Perm State University)

SUBMITTED: 16Apr63	ENCL: 00	SUB CODE: MM
NO REF SOV: 007	OTHER: 001	

Card 2/2

ACCESSION NR: AP4039606

S/0126/64/017/005/0777/0779

AUTHORS: Ayzentson, Ye. G.; Malinov, P. A.; Uvarov, A. I.

TITLE: On the decay of residual austenitic steel KhVG subjected to ultrasonic vibrations

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 5, 1964, 777-779

TOPIC TAGS: ultrasonic oscillation, austenitic steel, austenite, martensite lattice, transition rate, steel KhVG

ABSTRACT: The effect of ultrasonic oscillations on the residual austenitic steel decay has been studied under various heat treatments and oscillation amplitudes. Cylindrical specimens (9 mm in diameter) made of KhVG steel were used. They were heated to 1000C for 15 minutes, quenched in oil, and subjected to 20.5-Kcycle ultrasonic oscillations (at 170C and 200C temperatures in glycerin, and at 250-270C in a saltpeter bath). Other specimens, not subjected to oscillations, were used for comparison. All results were plotted as $\Delta\gamma$ versus oscillation time and amplitude ($\Delta\gamma$ is the difference in austenite content between the control specimen and those subjected to ultrasonic oscillations). At 170C the steel contained a significant amount of residual austenite. This amount reached a maximum after 30 minutes of

Card 1/2

L 55140-65 EWP(m)/EWA(d)/T/EWP(t)/EWP(b)/EWP(z)/EWA(h)/EWA(c) Peb MJW/JD

ACCESSION NR: AP5015823 UR/0148/65/000/006/0127/0130
669.011.7:621.034.4-8

21
20
B

AUTHOR: Ayzentson, Ya. G.; Spivak, L. V.

TITLE: Effect of ultrasonic vibration on austenite grain growth during annealing 16

SOURCE: IVUZ. Chernaya metallurgiya, no. 6, 1965, 127-130

TOPIC TAGS: steel, steel treatment, austenite grain, grain growth, ultrasonic treatment/U12 steel

ABSTRACT: The effect of treatment by ultrasonic vibration at 20.5 kc on the grain growth during subsequent annealing in austenite of U12 steel (1.15% C, 0.20% Mn, 0.32% Cr, 0.25% Si) has been investigated. Specimens 10 mm in diameter were treated with ultrasound at 850, 900, or 950C for 10—40 min, air cooled, and then annealed at 900—1200C for 4 hr. It was found that the grain size of specimens treated with ultrasound is, as a rule, larger than that of untreated specimens. Electric resistivity increases under the effect of ultrasound, which weakens grain boundaries and lowers strength and ductility

Card 1/2

L 55140-65

ACCESSION NR: AP5015823

However, subsequent annealing restored the strength and increases the elongation 15—20% over that of untreated specimens. Ultrasonic treatment followed by annealing changes the grain boundaries of austenite and increases the space between pearlitic lamellae. It reduces the rate of austenite grain growth during high-temperature annealing and lowers the microhardness of annealed specimens. The effect of ultrasonic vibration may be explained by the formation of submicroscopic distortions at grain boundaries which absorb various impurities. Orig. art. has: 5 figures. [ND]

ASSOCIATION: Yestestvenno-nauchnyy institut pri Permskom gosudarstvennom universitete (Natural-Sciences Institute, Perm State University)

SUBMITTED: 06Jul64 ENCL: 00 SUB CODE: MM

NO REF SOV: 007 OTHER: 000 ATD PRESS: 4025

Card 2/2

AYZENTSON, Ye.G.; UVAROV, A.I.

Investigating electrolytically separated austenite. Fiz. met. i metalloved. 19 no.3:470-472 Mr '65. (MIRA 18:4)

1. Yestestvenno-nauchnyy institut pri Permskom gosudarstvennom universitete imeni Gor'kogo.

L 63331-65 EWP(k)/EWP(z)/EWA(c)/EWT(1)/EWT(m)/EWP(b)/T/EWA(d)/EWP(t) Pf-4/Pi-4

ACCESSION NR: AP5017472 MJW/JD UR/0370/65/000/003/0123/0127
669.017.3

34
B

AUTHOR: Ayzentson, Ye. O.; Spivak, L. V.; Utrobina, I. K.

TITLE: Isothermal decomposition of the austenite of KhVG steel in an ultrasonic field
14 14

SOURCE: AN SSSR. Izvestiya. Metally, no. 3, 1965, 123-127

TOPIC TAGS: isothermal decomposition, decomposed austenite, supercooled austenite, ultrasonic vibration, bainitic structure
27

ABSTRACT: The present work is a continuation of a previous investigation which showed that ultrasonic vibrations exert a definite and not always unambiguous effect on the decomposition of supercooled austenite of KhVG steel (0.99% C, 0.25% Si, 0.25% Mn, 0.018% P, 0.019% S, 1.03% Cr, 0.15% Ni, 1.56% W): at 450°C the vibrations with amplitudes of 10 and 18 μ increase the stability of the austenite while at 250°C they contribute to its decomposition. These findings were obtained on the basis of a qualitative comparison of the microstructures and roentgenograms of specimens with and without exposure to the ultrasound. In this connection, it was of interest to investigate the effect of ultrasonic vibrations on the isother-

Card 1/2

L 63331-65

ACCESSION NR: AP5027472

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mal decomposition of austenite over a broader range of temperatures and to establish quantitative ratios. Accordingly the authors exposed specimens of this steel to ultrasonic vibrations with 18 μ amplitude in salt baths at temperatures of 700, 550, 500, 450, and 300°C. Transverse microsections of the specimens taken at the sites of maximum stresses were subjected to diffraction studies at room temperature. The amount of undecomposed austenite was estimated according to the reflexes (111) of austenite and (110) of alpha-phase. In addition, the microhardness of the decomposition products was determined by plotting frequency curves on the basis of measurements for every individual case. Microstructural examination revealed that ultrasonic vibrations in different temperature regions differently affect the austenite. At 700°C they inhibit the decomposition of austenite; at 550°C they lead to a reduction in the amount of residual austenite in specimens cooled to room temperature, while at 450°C they produce an opposite effect, and at 300°C they contribute to the decomposition of austenite. This is attributed by the authors to the mechanism of transformation in each temperature region. For supercooled austenite the effect of ultrasonic vibrations is expressed in the form of a finer bainitic structure. Orig. art. has: 5 figures.

ASSOCIATION: none

SUBMITTED: 02Apr64 ENCL: 00 SUB CODE: MM, SS

NR REF SOV: 001 OTHER: 000

Card 2/2

AYZENTSON, [illegible]; SPIVAK, L.V.

Effect of ultrasonic vibrations on the growth of an austenite grain during annealing. Izv.vys.ucheb.zav.; chern.met. 8 no.6:127-130 '65. (MIRA 18:8)

1. Yestestvenno-nauchnyy institut pri Permskom gosudarstvennom universitete.

L 34836-66 EWT(m)/T/EWP(t)/ETI IJP(c) JD

ACC NR: AP6021069 SOURCE CODE: UR/0148/66/000/006/0121/0124

4!

AUTHOR: Ayzentson, Ye. G.; Uvarov, A. I. 40

ORG: Perm' State University (Permskiy gosudarstvenyy universitet) B

TITLE: Effect of ultrasonic vibration on the decomposition of residual austenite of KhVG steel

SOURCE: IVUZ. Chernaya metallurgiya, no. 6, 1966, 121-124

TOPIC TAGS: steel, high carbon steel, steel heat treatment, austenite transformation, residual austenite, ultrasonic vibration, residual austenite decomposition, ultrasonic effect/KhVG steel

16

ABSTRACT: The effect of ultrasonic vibration at a frequency of 20 KC and an amplitude of up to 8-μ on the decomposition of residual austenite in homogenized high-carbon KhVG steel has been investigated. Steel specimens were: (1) annealed in air at 1000C or 1100C for 15 or 60 min, respectively, oil quenched, and subjected to ultrasonic treatment during tempering at 170, 200, 250, or 270C; (2) first irradiated in a salt bath at 1000C for 30, 60, or 120 min, oil quenched, and tempered at 170, 200, or 250C; (3) quenched from 1000C, subjected to ultrasonic treatment at room temperature for 1 hr, and then tempered at 170, 200, or 250C. It was found that ultrasonic vibration applied to steel during tempering promoted decomposition of residual austenite, probably because of migration of dislocations or

18

Card 1/2 UDC: 669.011.7:621.789.2

L 34836-66

ACC NR: AP6021069

because of local heating caused by the release of ultrasonic energy at the area of defects. Ultrasonic vibration applied to austenite prior to quenching of steel also promoted decomposition of residual austenite during subsequent tempering. This was probably due to the formation of microscopic areas with varying heterogeneity under the action of ultrasound. Ultrasonic treatment of hardened steel at room temperature hindered the decomposition of residual austenite during subsequent tempering, probably because of a decrease in the number of decomposition centers due to the annihilation of dislocations. Orig. art. has: 6 figures. [ND]

SUB CODE: 13, 11/ SUBM DATE: 14Oct64/ ORIG REF: 003/ ATD PRESS: 5132

Card 2/2

ACC NR: AP7002547 SOURCE CODE: UR/0413/66/000/023/0027/0027

INVENTOR: Ayzentson, Ye.G.; Bobrova, S.N.; Spivak, L.V.

ORG: none

TITLE: Method of heat treatment of steel. Class 18, No. 189005

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 23, 1966, 27

TOPIC TAGS: ~~steel~~ METAL heat treatment, ~~steel normalization~~, steel ultrasonic treatment, ~~steel refrigeration~~ ANNEALING, COOLING, REFRIGERATION, STEEL STRUCTURE

ABSTRACT: This Author Certificate introduces a method of heat treatment of steel which consists in annealing followed by air cooling and refrigeration. To ensure their dimensional stability, the steel parts are subjected to ultrasonic treatment prior to refrigeration. [ND]

SUB CODE: 13/ SUBM DATE: 18Jan65 / ATD PRESS: 5113

Card 1/1 UDC: 621.785.92:621.9.048.6:621.789

AYZENVARG, Khaim Vol'fovich; POSTNIKOV, S.A., inzh., retsenzent;
YAS'KOV, A.A., inzh., retsenzent; RZHECHITSKIY, B.D., inzh., red.; KAN, P.M., red.

[Textbook for electric harbor crane operators] Uchebnik kranovshchiku portal'nogo elektricheskogo krana. Izd.2., ispr. i dop. Moskva, Transport, 1964. 241 p.
(MIRA 17:12)

AYZENVARG, Ye.V.; POSTNIKOV, S.A., redaktor; SEMENOVA, M.M. redaktor;
VOLKOVA, Ye., tekhnicheskiy redaktor.

[Manual for the operator of a steam crane] Uchebnik dlia kranovshchika
parovogo krana. Moskva, Gos. izd-vo vodnogo transporta, 1954. 207 p.
(Cranes, derricks, etc.) (MLRA 7:12)

14(2) PHASE I BOOK EXPLOITATION SOV/2691

Ayzenvarg, Yefim Vladimirovich

Uchebnik dlya kranovshchika portal'nogo elektricheskogo krana (Textbook for Electric Portal Crane Operators) Moscow, Rechnoy transport, 1959. 217 p. Errata slip inserted. 5,500 copies printed.

Reviewer: B. D. Rzhechitskiy; Ed.: Kh. D. Rozenfel'd; Ed. of Publishing House: A. N. Makrushina; Tech. Ed.: T. T. Yermakova.

PURPOSE: This textbook is to be used for training qualified operators of electric portal cranes.

COVERAGE: This textbook presents the fundamentals of mechanical drawing, machine parts, and electrical engineering. Designs of electric portal cranes and electrical equipment used in the river ports and wharfs are treated. Crane operation, repair, assembly, and safety engineering are discussed in detail. No personalities are mentioned. There are 10 references, all Soviet.

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AVAILABLE: Library of Congress (TJ1365.A37)

GO/fal
12-8-59

AYZENVARG, Ye.V., inzh.

Raising the level of mechanization in ports of the Moscow Steamship Line. Rech. trans. 18 no.8:12-14 Ag '59. (MIRA 12:12)

1.Zamestitel' nachal'nika sluzhby portov Moskovskogo parokhodstva.
(Handling) (Volga Valley--Docks)

AYZENVARG, Yefim Vladimirovich; GAYDENKOV, Vladimir Matveyevich;
SMOL'SKIY, A.S., red.; LOBANOV, Ye.M., red.izd-va;
RIDNAYA, I.V., tekhn. red.

[Manual for the driver of loader trucks and electric trucks]
Posobie voditeliu avtopogruzchikov i elektrotelezhek. Moskva, Izd-vo "Rechnoi transport," 1963. 151 p. (MIRA 16:6)
(Industrial power trucks)
(Loading and unloading)

AYZENBERG, D. Ye., BRAZHNIKOVA, N. E., NOVIK, Ye. D, SHUL'GA, P. L.

"Uncomformity in the Deposits of the Lower Carboniferous of the L'vov [illegible] Syncline," Dokl. AN SSSR 69, No.1, 1949

Inst. Geol. Sci., Ukr SSR

AYZENBERG, D. YE.

PA 241T45

USSR/Geophysics - Stratigraphy **Nov/Dec 52**

"Stratigraphy and Paleogeography of the Upper Carboniferous of the Donets Basin," D. Ye. Ayzenburg

"Iz Ak Nauk SSSR, Ser Geol" No 6, pp 36-48

Discusses a number of insufficiently explained problems of subject stratigraphy. Clarifies the facial character and prevalence in section of many variegated formations, the so-called pre-araucaria tectonic phase, and the boundary between the Permian and Carboniferous in the Donets Basin.

241T45

AYZENVERG, D.Ye.; BRAZHNIKOVA, N.Ye.

Namur strata in the Donets Basin. Biul.MOIP.Otd.geol. 30 no.1: 37-47 Ja-F '55. (MLRA 8:5)
(Donets Basin--Geology, Stratigraphic) (Geology, Stratigraphic--Donets Basin)

AYZENBERG, D.Ye.; BRAZHNIKOVA, N.Ye.; YARTSEVA, M.V.

Correlation of horizons of the lower Carboniferous in the region of the western extension of the Donets Basin. Dop. UN URSR no.4:394-397 '56. (MIRA 9:12)

1. Institut geologichnikh nauk Akademii nauk URSR. Predstavlene akademikom Akademii nauk USSR V.G.Bondarchukom.
(Donets Basin--Geology, Stratigraphic)

15-57-3-3471

The Principal Outlines of the Geological History (Cont.)

the region. The boundary between groups is marked locally by rraces of erosion and by the absence of individual beds. Severl of these groups are associated with correlative deposits in neighboring regions [Poles'ye, Voronezhskoye podnyatiye (uplift) and Moscow basin] the author proposes to divide the Lower Carboniferous deposits into five kompleksy (groups) (from the base upward): Buzinovskiy, Yelenovskiy, Yefremovskiy, Starobeshevskiy, and Amvrosiyevskiy (the upper part of this last group belongs to the middle Carboniferous). The Buzinovskiy kompleks (group) corresponds to sediments of the Tournaisian transgression, the Yelenovskiy group to the early Visean transgression, the Yefremovskiy to the late Visean, the Starobeshevskiy to the early Namurian, and the Amvrosiyevskiy to the late Namurian. In the eastern part of the region all these groups are conformable and can be distinguished only by changes in the character of the rock. To the west, the deposits of the Buzinovskiy, Yelenovskiy, and Yefremovskiy groups all overlap the underlying formations. Deposits of the Starobeshevskiy and Amvrosiyevskiy groups are more restricted in areal extent than are the lower groups. The principal coal accumulation in the western covered part of the Conbass is associated with the upper (regressive) part of the Yefremovskiy group.

Card 2/2 Ye. O. P.

AYZENVERG, D.Ye.; BRAZHNIKOVA, N.Ye.

Diagram of stratigraphic correlation of lower Carboniferous deposits of the greater Donets Basin. Geol.zhur. 16 no.1:7-20 Je '56. (MLRA 9:8)

(Donets Basin--Geology, Stratigraphic)

AYZENVERG, D.Ye.; BRAZHNIKOVA, N.Ye.

Comparative study of the lower Visean division in the Donets Basin and in some other regions of the U.S.S.R. Dokl.AN SSSR 108 no.4:691-694 Je '56. (MIRA 9:9)

1.Predstavleno akademikom N.M.Strakhovym.
(Russian platform--Geology, Stratigraphic)